

AMENDMENTS TO THE DRAWINGS

Please replace current Figs. 1 and 2 with the attached replacement Figs. 1 and 2 herewith. Fig. 1 has been amended to show numerals for raceways 2a, 2b, 3a, 3b; lines of contact L1, L2, and lubrication passage 13.

Fig. 2 has been amended to provide the section plane with Roman numerals.

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

In response to the requirement to depict a lubrication opening in the outer ring (as recited in claims 22 and 28), an amended Fig. 1 is presented herewith to depict such an opening 13. In an amended Fig. 2, the designation of the section plane has been corrected.

The claimed invention relates to a double-row anti-friction bearing for a transmission adapted to operate at a very high number of revolutions and high temperature, such as a gear shaft of a race car for example. Such bearings are subject to very high forces. The presently claimed invention maximizes the loads that can be withstood by such bearings by a combination of features, namely:

- a) making the diameter of the spherical rolling elements of the first row different from the diameter of the spherical rolling elements of the second row,
- b) making the spherical rolling elements of a ceramic material and
- c) constructing the bearing as an angular contact ball bearing wherein the rolling elements of the first row contact only diagonally opposite sides of the first and third raceways 2a, 3a respectively (see the attached drawings amendment), so that the contact area for those rolling elements forms a first contact angle, α_1 , and wherein the rolling elements of the second row contact only diagonally opposite sides of the

second and fourth raceways 2b, 3b, respectively, so that the contact area for those rolling elements forms a second contact angle a_2 which is of different size than the angle a_1 .

Claim 15 has been amended and recites the above-described combination of features. That claim stands rejected over Maret in view of Koyama et al., it being considered that Maret discloses all features of claim 15 except for the rolling elements being formed of a ceramic material. However, it is submitted that Maret does not disclose the different contact angles recited in claim 15. Claim 15 has been amended to recite that the spherical rolling elements of the first row only contact diagonally opposite sides of the first and second raceways, respectively, and that the spherical rolling elements of the second row only contact diagonally opposite sides of the second and fourth raceways, respectively. Thus, respective angles of contact a_1 and a_2 are defined. In Maret, the rolling elements 2, 3 are not restricted for contact with only diagonally opposite sides of their respective raceways. In fact, each of the rolling elements 3 makes contact with both axially spaced sides of the racetrack on race 7, and each rolling element 2 makes contact with both axially spaced sides of the raceway on race 6. Thus, it is not possible to even identify the contact angles of elements 2 and 3, let alone determine whether they are of different sizes.

Accordingly, it is submitted that even assuming, for the sake of argument, that it would have been obvious to form the rolling elements of Maret of a ceramic material in view of Koyama et al., * the presently claimed invention would not result.

* It is not seen that the bearings disclosed by Maret would be subject to the high stresses and forces that would require the use of ceramic bearings, so the use of ceramic bearings in Maret should not be considered obvious.

Therefore, it is submitted that claim 15 and all dependent claims distinguish patentably over the cited prior art, and allowance of the application is requested.


Early and favorable action concerning this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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